

The Global Lead Advice and Support Service (GLASS) provides information and referrals on lead poisoning and lead contamination prevention and management, with the goal of eliminating lead poisoning globally and protecting the environment from lead.

GLASS is run by The LEAD Group Incorporated ABN 25 819 463 114



global lead advice
& support service

FACTSHEET

Prevention of Exposure to Lead at Work in Indonesia

Which occupations have more risk of high lead exposure?

Shooters and especially shooting instructors (eg in the Police and Armed Forces) are at particular risk of high lead exposure because they typically use lead bullets. Risks are higher for shooters who practice in indoor shooting ranges (if these exist in Indonesia) (Rainier Ballistics Corporation 1992). People who have been shot but survived and have retained lead shot or bullet fragments in their bodies should have regular blood lead tests for the rest of their life, to determine whether lead is leaching from the lodged lead fragments into the bloodstream (LLSBS 2010). Cleaning and maintenance workers at shooting practice ranges are also at risk from the lead dust which (is emitted every time a gun is fired and) collects on soil, floors and other surfaces (MWSHP 2002).

There are many workers who are at serious risk of high lead exposure, particularly those workers in industries where activities as following are done:

1. Lead acid batteries manufacture and breaking [the plastic casing of a battery has to be broken in order to remove the lead plates for re-use of recycling]
2. Lead smelting, alloying, casting and refining
3. Ceramic glaze mixing
4. Removal and burning of lead old paint
5. Spray painting of vehicles
6. Renovating infrastructure or buildings where lead-based paint was used
7. Lead fishing weight production
8. Manufacturing lead compounds and lead glass
9. Recovering lead from scrap or waste
10. Steel bridge maintenance
11. Brass, copper and lead foundries
12. Radiator manufacturing and repair
13. Car or boat maintenance
14. Working with assay laboratories
15. Furniture refinishing

People who work in electronic, plumbing and printing industries may also be at risk of exposure to lead, but the percentage is lower than people who work on the above activities (Source: HSE UK 2009, WorkSafe BC 2006 and Oregon DHS 2007).

How to prevent lead exposure in the work place

The first principle of preventing lead exposure at work is to institute the HIERARCHY OF CONTROLS (NSW WorkCover (2008) which are:

1. substitute the lead hazard with another of lower risk
2. isolate the lead hazard from the person put at risk
3. minimise the lead risk by engineering means
4. minimise the lead risk by administrative means
5. provide personal protective equipment (PPE)

In more detail:

1. Replacing lead material with non-lead material is one of the most effective ways to prevent lead exposure in the workplace. However, the replacement material needs to be safe and not contain hazardous material.
2. Isolating the lead hazard, e.g. having a fume cupboard, where the worker can carry out the task without coming into direct contact with the fumes.
3. Engineering control to eliminate lead exposure includes improving exhaust ventilation of the work area, and modified work processes to eliminate lead exposure.
4. Administrative means of reducing lead exposure: Increase awareness of workers about lead hazards in the workplace. This includes education and training in safe work procedures, maintenance of equipment, provision of separate food consumption areas, provision of good facilities for showers and hand-washing, and advice on safety hygiene, such as not biting one's nails or chewing gum while during processing, washing hands before eating or drinking, removing work clothes and taking a shower before going home.
5. Equipment must be used in workplace to minimize lead exposure. This equipment may include safety clothes and respirators that are washed regularly and remain in good condition.

Lead exposure in the workplace can prevent by minimizing the amount of lead with which the workers come in contact. All employers in lead industries must provide an exposure control plan to minimize the exposure of their employees to lead (WorkSafe BC 2006). Furthermore, signs must be posted in work areas containing hazardous material in order to warn the workers of potential hazards. In addition, the workers should always wear safety equipment and make sure the equipment is safe and in good condition. Exposure to dust and fume system collection also should be limited in the workplace (DHS 2010). It is also essential for employers to provide training and information to work safety with lead in all conditions whether it emergency or not (HSE UK 2009). Also, employers are required to monitor air quality in order to determine the level of lead exposure in workplace. If air quality in the workplace contains lead above 30 microgram per cubic meter (ug/m³), employers must provide medical examination, including a blood-lead test every six months (permissible workplace exposure is below 50 ug/m³). If the employee has a high blood-lead level, the employer must transfer the employee to work in an area where they are not exposed to lead, and guarantee the employee the same benefits as their regular job (DHS 2010).

References - see [Lead Poisoning in Indonesia](#)